US 20190057286A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2019/0057286 A1**

WOULFE et al. (43) **Pub. Date: Feb. 21, 2019**

(54) **CRIME SCENE ANALYSIS USING MACHINE LEARNING**

(71) Applicant: **MICROSOFT TECHNOLOGY LICENSING, LLC**, Redmond, WA (US)

(72) Inventors: **Muiris WOULFE**, Dublin (IE); **Andreas BALZER**, Dublin (IE)

(73) Assignee: **MICROSOFT TECHNOLOGY LICENSING, LLC**, Redmond, WA (US)

(21) Appl. No.: **15/678,518**

(22) Filed: **Aug. 16, 2017**

Publication Classification

(51) **Int. Cl.**

G06K 9/62	(2006.01)
G06Q 50/26	(2006.01)
G06K 9/36	(2006.01)
G10L 15/02	(2006.01)

(52) **U.S. Cl.**

CPC ***G06K 9/6277*** (2013.01); ***G06Q 50/265*** (2013.01); *H04N 5/00* (2013.01); ***G10L 15/02*** (2013.01); ***G06K 9/36*** (2013.01)

(57) **ABSTRACT**

Technologies are provided for automated crime scene analysis using machine learning. Firearm models, types, or even specific firearms may be automatically detected from captured audio files or continuous audio streams (e.g., recording microphones) using machine learning techniques. The detection may also be based on (or enhanced by) captured still images or video files/streams. Further information such as crime scene layout, wound types and locations, and similar information may be provided to the analysis service through manual input or automated capture (e.g., through analysis of image/video data). A number of firearms used in the commission of the crime may also be detected. Specific firearm types may be associated with specific crime types. Similar techniques may also be used to detect and classify types and quantity of explosive material.